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having its own slide, rammer, and windlass,) will be fully employed.

The cost of this plough, with the various irons belonging to it, is 9*l.* 5*s.*; and there will be necessary for the complement of men to follow up the team, so as to finish about two acres a-day, six of the narrow spades, three large scoops, four small ditto, three slides, three rammers, and three windlasses; amounting in all, including the cost of the plough, to about 18*l.*

THOMAS LAW HODGES.

No. IV.

FOREST TREES.

NOTE respecting Plantations of Forest Trees in the Neighbourhood of Liverpool; chiefly from information communicated by RICHARD YATES, Esq. of Liverpool.

THE country in the neighbourhood of Liverpool is naturally unfavourable to the growth of trees, the soil being, for the most part, dry, shallow, and sandy. It rests on beds of the new red sandstone, which, although not hard, is so compact as seldom to allow the roots of vegetables to penetrate it. Sometimes it is cracked, and then the roots of trees insinuating themselves, draw supplies at least of rain-water as it percolates through the rock. In many parts there intervenes between the rock and the soil a bed of brown sandy clay, containing rolled pebbles of granite, of limestone, &c., in its upper part excessively

dry and compact. This bed is known by the name of *ravin*, and in its effects is similar to the *pan* of Norfolk, and to a bed, probably the same as the ravin, which covers the new red sandstone of Sherwood forest, and other parts of Nottinghamshire. The effect of this compact surface is to prevent the roots of trees from passing through it; and therefore the plants, especially when young, are very liable to suffer from drought.

The vicinity of the sea, also, is an additional obstacle to planting near Liverpool. The prevailing winds are from the N.W., and heavy gales from this quarter carry the salt spray several miles into the country, and deposit it on the hedges and trees, whereby the tender shoots are always injured, and sometimes entirely cut off.

For the above reasons, the immediate neighbourhood of Liverpool used to be almost entirely bare of trees, the hedge-rows containing only a few stunted oaks; all leaning from the west, being unable to throw out a single spray in that direction.

Between twenty and thirty years ago, a tract of land, extending from Liverpool for four or five miles along the northern bank of the estuary of the Mersey, and intersected by some shallow valleys or dingles, was brought to sale by two great proprietors. It was purchased by the opulent inhabitants of the town, and was laid out chiefly for villas surrounded by their respective plantations, which, though not large individually, form altogether a considerable mass, and afford each other mutual shelter.

The land, in many cases, was prepared by digging it from eighteen to twenty inches deep, and turning the good upper soil to the bottom, bringing the ravin to the top. In some cases, the ravin below the reach of the

spade was broken into large lumps, and hacked so as to open a passage through it for the roots; and the holes for the reception of the trees were also occasionally filled with loam or marl. The trees themselves were planted younger and smaller than usual, and successive crops of turnips or potatoes were put in to keep down the weeds, and to ensure the earth being properly stirred till the trees had covered and had taken full possession of the ground.

The outer skirts of the plantations, and the eastern sides of the dingles, have suffered more or less from the sea winds; the other parts are in a very satisfactory state as far as regards the deciduous trees.

The firs, and, generally speaking, all of the pine tribe except the pinaster and the larch, have failed: the larches were for many years infested with a white cottony matter, the product of some insect, but are now recovering: this matter greatly injured their appearance, but has not much affected their growth, as in twenty years they have attained the height of from forty to forty-two feet.

The Spanish chestnuts have flourished greatly, being as high as the larches. The birches and sycamores on the western side of the dingles are from thirty-three to forty feet high. Beeches, limes, elms, ashes, English oaks, and American oaks, have in the same situations attained the height of from thirty to thirty-six feet, although the English oaks have occasionally been injured by the spray. The trees, where judiciously thinned, are well furnished with branches, being at present highly ornamental, and giving the promise of future profit.